

ABSTRACT OF THE DISCLOSURE

A data accessing system provides access data to video display stored in one or more frame buffers via a virtual frame buffer implemented as a phantom port. The virtual frame buffer facilitates remapping between pixel coordinate space and memory address space for both tiled and linear addressing schemes. Generation of virtual linear and virtual tiled addresses is obtained through one or more of shifting, replacing, and concatenating operations. These operations can be implemented to perform very fast in comparison to the multiplication, addition, division, and modulo operations used in conventional display processors, video controllers, and central processing units. In some embodiments of the virtual addresses are converted to addresses in a frame buffer for accessing the frame buffer. Alternate embodiments use a frame buffer adapted to respond directly to generated virtual addresses. The present invention can thus generate addresses for accessing data in a frame buffer and efficiently use data storage capacity in the frame buffer.

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